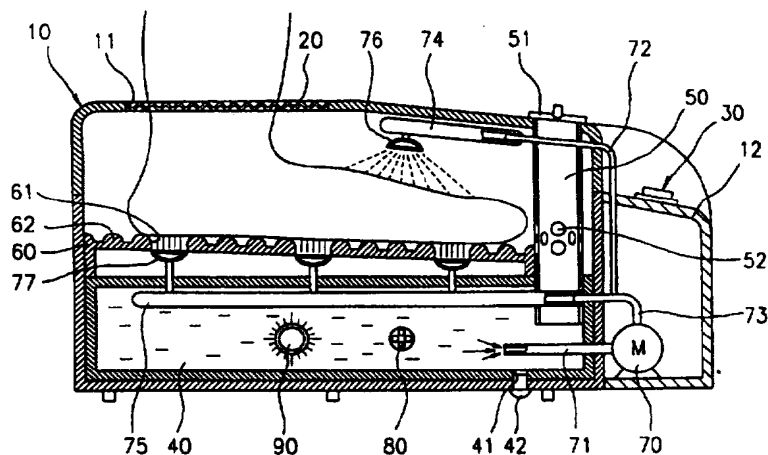




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(54) Title: FOOT MASSAGE APPARATUS**(57) Abstract**

A foot massage apparatus which is capable of increasing a massage effect by continuously or intermittently providing the bottom surfaces or top surfaces of the feet of a user with a predetermined impact effect by using water having a predetermined spray pressure and massaging the feet by selectively using a liquid medicine or cool or warm water. The apparatus includes a main body having an opened portion formed in an upper surface of the same and a control panel disposed in a front surface of the same and having a plurality of switches, a water container disposed in an inner bottom portion of the main body and having an inlet tube, the upper end of which is extended to the outside of the main body for receiving water or ice therethrough, and a discharging hole for discharging water from the water container to the outside of the main body, a foot rest disposed above the water container and having a plurality of holes, and a motor pump for pressurizing and forcibly spraying the liquid in the water container into the interior of the main body.

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FOOT MASSAGE APPARATUS

TECHNICAL FIELD

The present invention relates to a foot massage apparatus, and in particular to an improved foot massage apparatus which is capable of more effectively massaging human feet by forcibly spraying water or a liquid medicine over the bottom surfaces (sole) and the top surfaces (dorsal) of the feet.

BACKGROUND ART

Generally, as a conventional foot massage apparatus, there are known a foot massage apparatus which is directed to generating bubbles in a state that the feet of a user are submerged in water by using a bubble generator in order to massage the bottom surfaces of the feet and a foot massage apparatus which is directed to vibrating the feet of a user by using a vibrator. However, the foot massage apparatus using a bubble generator has a disadvantage in that even though it is possible to use a liquid medicine for thus effectively treating the feet, since the strength of the generated bubbles is relatively weak, it is impossible to effectively massage the feet of a user. In addition, in the foot massage apparatus using the electric type vibrator, it is impossible to use a liquid medicine. Namely, the foot massage apparatus using the electric type vibrator is originally designed to simply vibrate the feet of a user. Therefore, it is impossible to obtain a sudden or continuous pressure or impact effect in order to effectively massage the feet.

Furthermore, since the above-described conventional foot massage apparatuses are basically designed to massage only the bottom surfaces of the feet of a user, it is impossible to massage the top surfaces of the feet.

DISCLOSURE OF THE INVENTION

Accordingly, it is an object of the present invention to provide a foot massage apparatus which overcomes the aforementioned problem

encountered in the conventional art.

It is another object of the present invention to provide an improved foot massage apparatus which is capable of increasing a massage effect by continuously or intermittently providing the bottom surfaces or top surfaces
5 of the feet of a user with a predetermined impact effect by using water having a predetermined spray pressure and massaging the feet by selectively using a liquid medicine or cool or warm water.

To achieve the above objects, there is provided a foot massage apparatus which includes a main body having an opened portion formed in
10 an upper surface of the same and a control panel disposed in a front surface of the same and having a plurality of switches, a water container disposed in an inner bottom portion of the main body and having an inlet tube, the upper end of which is extended to the outside of the main body for receiving water or ice therethrough, and a discharging hole for discharging water from
15 the water container to the outside of the main body, a foot rest disposed above the water container and having a plurality of holes, a pressurizing member disposed in a predetermined portion of the water container for receiving the water, etc. from the water container and pressurizing the same, and a discharging member communicating with the pressurizing member for
20 discharging the liquid in the water container into the interior of the main body.

A shower type nozzle, one spray hole type nozzle, or a type having a plurality of spray holes may be used for the spray nozzle.

In addition, it is possible to obtain a hot water massage effect by providing a heater in a water container and also to obtain a sterilized
25 massage effect by providing an ultraviolet ray lamp within the water container.

Furthermore, it is possible to control the operation of the motor pump by disposing a limit switch operated in accordance with the opening/closing operation of a rubber curtain which covers an opened portion of the main
30 body.

Additional advantages, objects and features of the invention will

become more apparent from the description which follows.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will become more fully understood from the
5 detailed description given hereinbelow and the accompanying drawings which
are given by way of illustration only, and thus are not limitative of the
present invention, and wherein:

Figure 1 is a perspective view illustrating a foot massage apparatus
according to the present invention;

10 Figure 2 is a plan view illustrating a foot massage apparatus according
to the present invention; and

Figure 3 is a cross-sectional view illustrating a foot massage apparatus
according to the present invention.

MODES FOR CARRYING OUT THE INVENTION

15 Figure 1 illustrates a foot massage apparatus according to the present
invention, Figure 2 illustrates a foot massage apparatus according to the
present invention, and Figure 3 is a cross-sectional view of the apparatus of
Figure 2.

20 As shown therein, the foot massage apparatus according to the
present invention includes a hollow cubic-shaped main body 10. The main
body 10 includes an opened portion 11. A rubber curtain 20 having foot
insertion holes 21 covers the opened portion 11 of the main body 10.

In addition, a control panel 12 having a plurality of control switches 30
25 for controlling the entire operation of the apparatus is disposed in a front
portion of the main body 10.

A water container 40 is disposed in the inner bottom surface of the
main body 10.

An inlet tube 50 is externally extended to the upper portion of the main
30 body 10, has a plurality of holes 52 formed in the lower portion of the same
is connected, and is covered by a lid 51. The lower end portion of the inlet

tube 50 communicates with an upper portion of the water container 40. A discharging hole 41 is disposed in a lower portion of the same for discharging water in the water container 40 to the outside of the main body 10.

A foot rest 60 having a plurality of holes 61 and a plurality of embossed portions 62 is disposed above the water container 40 and is inclined from the inlet tube 50 at a predetermined angle.

In addition, a motor pump 70 is disposed beside the water container 40, namely, in a lower portion of the control panel 12 of the main body 10 and includes a suction tube 71 one end of which communicates with the interior of the water container 40, and upper and lower discharging tubes 72 and 73 disposed in an upper bottom surface of the main body 10 and an upper bottom surface of the water container 40, respectively.

Upper and lower head portions 74 and 75 are connected with the upper and lower discharging tubes 72 and 73, and upper and lower nozzles 76 and 77 for spraying a liquid pressurized by the motor pump 70 are coupled to the upper and lower head portions 74 and 75.

Here, the lower nozzle 77 is disposed in such a manner that the same is extended into the interior of the main body through the holes 61 formed in the foot rest 60 with a predetermined space being formed with respect to the upper surface of the foot rest 60. The installation position and number of the same may be determined as occasion demands.

In addition, a heater 80 is installed in the interior of the water container 40 for heating water or the like contained in the water container 40.

An ultraviolet ray lamp 90 is installed in an inner portion of the water container 40 for sterilizing water or the like in the water container 40.

The switches 30 denote a power switch 31, a timer 32, a spraying pressure control switch 33, a heater driving switch 34, and an ultraviolet ray lamp driving switch 35.

In the drawings, reference numeral 36 denotes a power cord, 42 denotes a lid for opening/closing the discharging hole 41 of the water container 40, and 43 denotes a water meter for checking the amount of the

water or the like in the water container 40.

In this embodiment of the present invention, the rubber curtain 20 is fixedly attached to the opened portion 11 of the main body 10, however the rubber curtain 20 may be formed to slidably open/close the opened portion 11 of the main body 10.

In this case, a limit switch may be attached to a side portion of the rubber curtain 20 for operating the motor pump 70 only when the opened portion 11 is closed by the rubber curtain 20.

As the spray nozzles 76 and 77, a conventionally used shower type nozzle is preferably used. However, a spray type nozzle which is disclosed in U.S. Patent Number 4,588,130 and is capable of continuously or intermittently spraying water and alternately changing the number of water streams and a spraying pressure of water may be preferably used.

The operation and effects of the foot massage apparatus according to the present invention will now be explained with reference to the accompanying drawings.

First, the lid 51 of the inlet tube 50 is opened, and a predetermined amount of water is put into the water container 40. Thereafter, feet of a user are inserted through the foot insertion holes 21 formed in the rubber curtain 20 and then are placed on the foot rest 60. At this time, the angle portions of the feet of the user are fully inserted into the inner space of the main body 10 and then are tightly curtained by the elastic force of the rubber curtain 20.

In this state, the timer 32 and the spraying pressure control switch 33 are set, and the power switch 31 is turned on for thus driving the motor pump 70, and then the water in the water container 40 is pressurized to a predetermined pressure. Thereafter, the thusly pressurized water is sprayed by the upper and lower nozzles 76 and 77 through the discharging tubes 72 and 73 and the upper and lower head portions 74 and 75. The thusly sprayed water massages the top surfaces of the feet positioned on the foot rest 60, and the bottom surfaces of the feet are massaged by the water sprayed through the lower nozzle 77.

The massage water gathered from the bottom and top surfaces of the feet drop onto the foot rest 60, and easily flows through the inlet tube 50 because the foot rest 60 is formed to be inclined toward the inlet tube 50. Thereafter, the water flows into the interior of the water container 40 through
5 the holes 52 formed in the lower portion of the inlet tube 50.

In addition, when performing a cool or hot massage, ice may be provided into the water container 40 through the inlet tube 50, or the heater 80 is operated by turning on the heater driving switch 34.

Furthermore, a medicine, salt, etc. may be provided into the water
10 container 40 through the inlet tube 50 for thus obtaining a predetermined treating effect. In addition, it is possible to sterilize water in the water container 40 by using the ultraviolet ray lamp 90.

As described above, the foot massage apparatus according to the present invention is capable of maximizing a massage effect by forcibly
15 spraying water or the like over the bottom surfaces and the top surfaces of the feet of a user by using a motor pump after a water container is enough filled by water or the like. In addition, it is possible to fill ice or liquid medicine into the water container for thus spraying the same over the feet whereby it is possible to obtain a foot treating effect. Furthermore, it is possible to
20 selectively perform cool and hot massages by providing a heater in the apparatus for thus maximizing the massage effects.

Although the preferred embodiment of the present invention has been disclosed for illustrative purposes, those skilled in the art will appreciate that various modifications, additions and substitutions are possible, without
25 departing from the scope and spirit of the invention as recited in the accompanying claims.

CLAIMS

1. A foot massage apparatus, comprising:
 - a main body having an opened portion formed in an upper surface of the same and a control panel disposed in a front surface of the same and
 - 5 having a plurality of switches;
 - a water container disposed in an inner bottom portion of the main body and having an inlet tube, the upper end of which is extended to the outside of the main body for receiving water or ice therethrough, and a discharging hole for discharging water from the water container to the outside of the main
 - 10 body;
 - a foot rest disposed above the water container and having a plurality of holes;
 - a pressurizing means disposed in a predetermined portion of the water container for pressurizing the water, etc. in the water container; and
 - 15 a discharging means communicating with the pressurizing means for discharging the liquid in the water container into the interior of the main body.
2. The apparatus of claim 1, wherein a plurality of holes are formed in a predetermined portion of the inlet tube of the water container.
- 20 3. The apparatus of claim 2, wherein an upper portion of said inlet tube of the water container is opened/closed by a lid.
4. The apparatus of claim 1, wherein said pressurizing means is
- 25 a motor pump including:
 - a suction tube one end of which communicates with the interior of the water container; and
 - upper and lower discharging tubes extended toward an upper bottom surface of the main body and an upper bottom surface of the water
 - 30 container, respectively, for thus being communicated with the discharging means, respectively.

5. The apparatus of claim 4, wherein said discharging means includes:

an upper head portion communicating with the upper discharging tube;

an upper nozzle communicating with the upper head portion for
5 spraying pressurized liquid;

a lower head portion communicating with the lower discharging tube;

and

a lower nozzle communicating with the lower head portion for spraying
pressurized liquid.

10

6. The apparatus of claim 5, wherein said lower nozzle is extended into the interior of the main body through the holes formed in the foot rest.

15 7. The apparatus of claim 1, wherein said foot rest is tilted toward the inlet tube at a predetermined angle.

8. The apparatus of claim 1, wherein a heater is installed in the water container for heating water therein.

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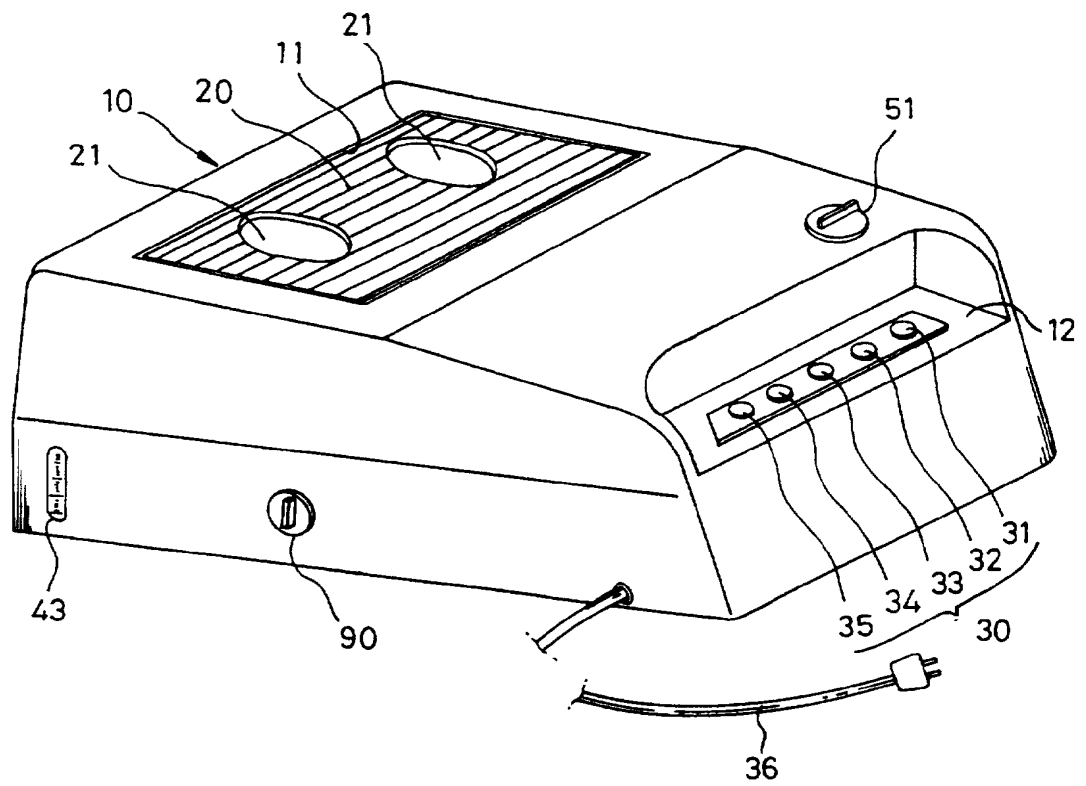
9. The apparatus of claim 1, wherein an ultraviolet ray lamp is installed in the interior of the water container for sterilizing the water in the water container.

25 10. The apparatus of claim 1, wherein said rubber curtain is openably attached to the opened portion of the main body.

11. The apparatus of claim 10, wherein a limit switch is installed in the rubber curtain for controlling the operation of the motor pump, whereby
30 the motor pump is operated only when the rubber curtain is closed.

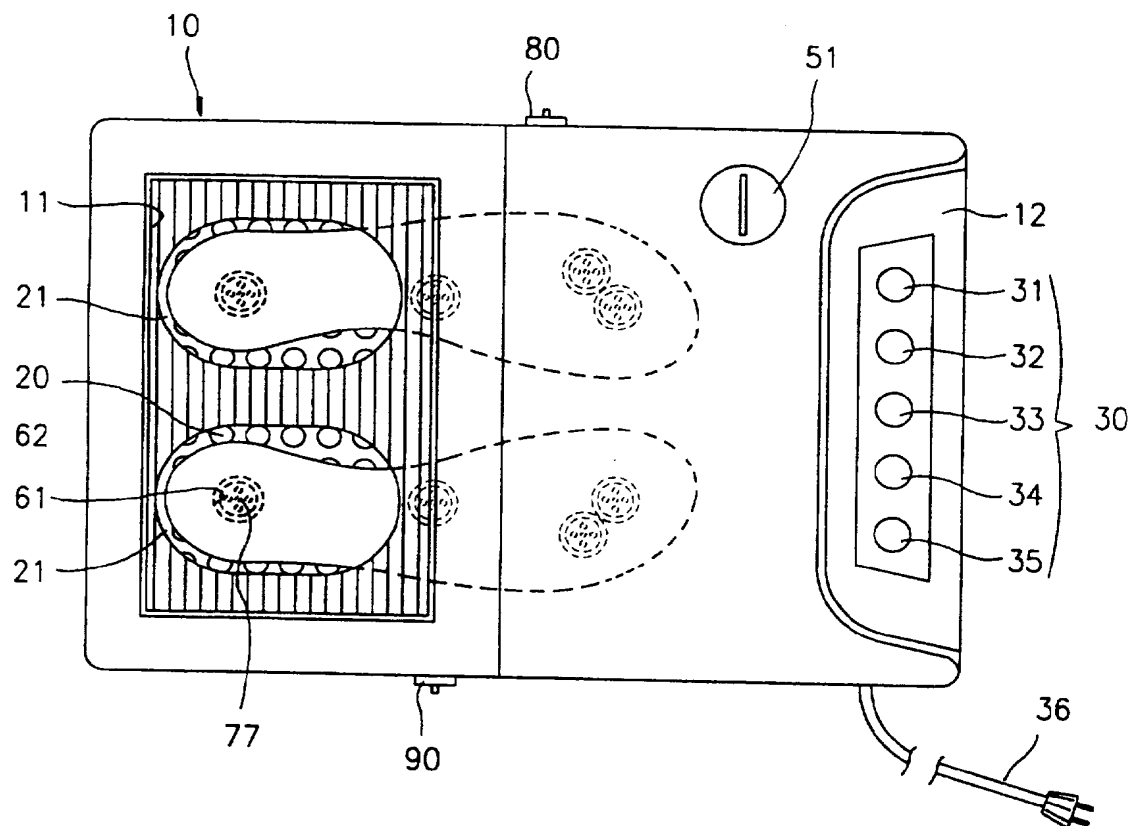
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FIG. 1



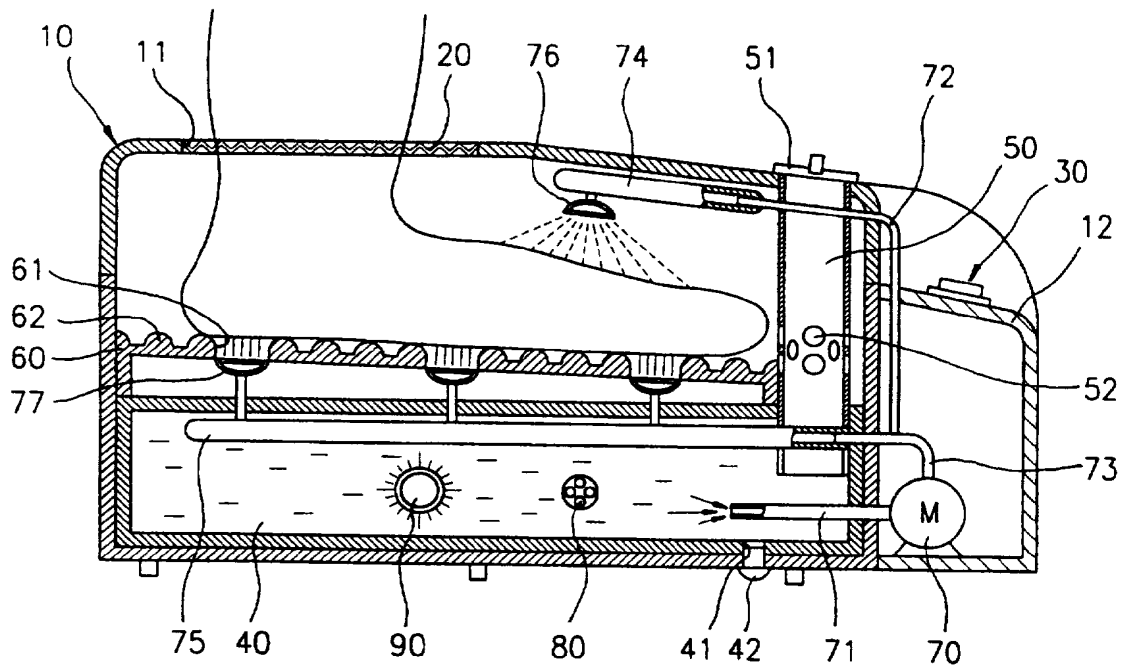
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FIG. 2



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FIG. 3



INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR 97/00083

A. CLASSIFICATION OF SUBJECT MATTER

IPC⁶: A 61 H 35/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC⁶: A 61 H

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

FOOT, FEET, MASSAG+, SPRAY+, PUMP+, HEAT+,
 EPOQUE PRESSUR+, WATER, UV, ULTRAVIOLET+
 (ULTRA W VIOLET+)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FR 2 546 061 A3 (ROLANDO WALTER) 23 November 1984 (23.11.84), fig.1,3.	1,4,7,8
A	GB 2 156 218 A (TENSIO ELECTRIC INDUSTRIAL CO.) 09 October 1985 (09.10.85), fig.1,2.	1,8
A	CH 650 667 A5 (SCHÄREN) 15 August 1985 (15.08.85), fig.1; claim 1.	1,8

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

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Name and mailing address of the ISA/ AT
 AUSTRIAN PATENT OFFICE
 Kohlmarkt 8-10
 A-1014 Vienna
 Facsimile No. 1/53424/535

Authorized officer

Zawodsky

Telephone No. 1/53424/346

INTERNATIONAL SEARCH REPORT
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FR A3 2546061	23-11-84	DE U1 8317770 FR B3 2546061 GB A0 8318331	03-11-83 24-05-85 10-08-83
GB A 2156218		GB A0 8404162 GB A1 2156218	21-03-84 09-10-85
CH A 650667	15-08-85	keine - none - rien	